

SEA-TROSY AND RELATED METHODS

A method for preferentially observing an exposed position (1c) of a macromolecule. A sample is obtained having a macromolecule (1a) with a first proton (1) and a second molecule (2a) with a second proton (2); then applying a magnetic field (4) to the sample and irradiating the sample with a pulse sequence (5) that preferentially demagnetizes protons of the macromolecule (1,3) relative to the second proton (2); allowing the second proton (2) to exchange (6) with an exposed proton (1) of the macromolecule; and detecting the magnetization from the relatively magnetized second proton (2), which is now bound to the exposed position (1c) of the macromolecule. The invention also provides a method for observing a position in the macromolecule that bind a ligand.